

REMARKS

Applicants hereby affirm the election of the invention of Group I, claims 1-31, without traverse. Applicants have limited the claims by the present amendment to a liquid crystal device and accordingly request consideration of that invention election. The present claims are readily distinguishable over the prior art for the reasons indicated below. Claim 34 is placed back under active consideration.

Claims 6, 19, 20, 21, and 22 stand rejected under 35 U.S.C. 112.. Claims 19, 21, and 22 have been canceled. The content of original claims 19 and 22 has been incorporated into claim 1. The rejections of claims 6 and 20 are believed overcome by the present amendment of claims 1, 6, and 20.

Claims 1-6, 8-9 and 11-31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Aylward et al (U.S. Patent No. 6,017,686) in view of Harrison et al (U.S. Patent No. 5,100,862).

Aylward is directed to a translucent back-lit display employing a paper base with biaxially oriented voided polyolefin overlay. The purpose of the arrangement of Aylward is to diffuse light sufficiently to hide the source of light behind the image.

Amended claim 1 is directed to a liquid crystal device comprising a light source and a light diffuser comprising a thermoplastic layer incorporating organic bead-containing microvoids, said microvoids have a major axis diameter to minor axis diameter ratio of between 1.6 and 1.0, and having an integral smoothing layer on at least one surface thereof, the smoothing layer exhibiting an average thickness less than 12 microns, and wherein the diffuse light transmission of the diffuser at 500nm is at least 65% and the light transmission efficiency of the diffuser is greater than 80%. It is important to note that there is a need to maintain both a high diffuse light transmissivity and a high light transmission efficiency. The former provides for a brighter image and the latter provides for improved uniformity of imaging. The needs for a Liquid Crystal device are distinguishable from a back-lit paper-based transparency. The LC device serves to provide a uniform and diffuse light source. A back-lit paper-based transparency has the objective of concealing the back light and in so doing necessitates the reduction in transparency.

According to Table 4 of Aylward, his invention achieves a transmission of 28% with a range of 40-60% being mentioned but not demonstrated. Such a level would be unsatisfactory for an LC display, especially one employing batteries for power.

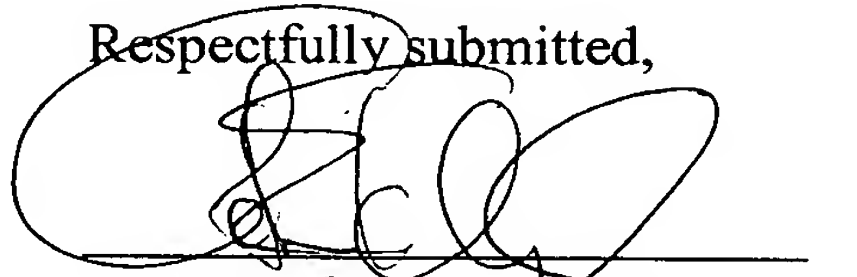
The Harrison reference is directed to a dye receiver on a voided reflective support that is not light transmissive. The voided support is opaque. (See col.1, lns 48-68.). It is not seen how the combined teachings of these two references directed to reflective materials is applicable to the highly transmissive needs of a diffuser for the back-light of an LCD.

In summary, the need for high diffusion efficiency combined with high transmissivity is essential for an LCD. In order for the image to be acceptable, the back light radiation must be converted to an output uniform across the display screen and thus a high diffusion efficiency is needed. Further, in order to prolong battery life, a high level of diffuse light transmittance is needed. The films of the cited references have different objectives and are employed with opaque paper-like supports.

In view of the deficiencies of the two primary references, the secondary references do not supply the deficiencies in their teachings.

The Examiner is respectfully requested to withdraw the outstanding rejection and to pass the subject application to Allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'A. Kluegel', is written over a horizontal line.

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